

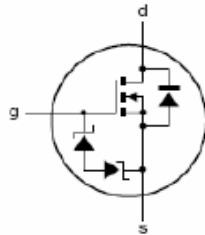
FEATURE

- High density cell design for low $R_{DS(ON)}$
- Voltage controlled small signal switch
- Rugged and reliable
- High saturation current capability

SOT-23

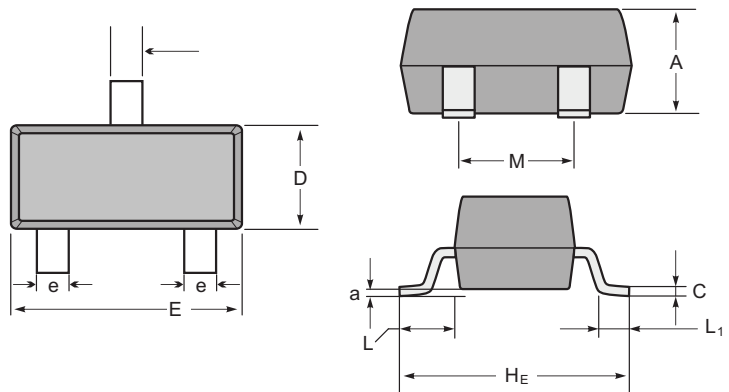
1. GATE
2. SOURCE
3. DRAIN

Equivalent Circuit



Marking

Type number	Marking code
BSN20	SS



SOT-23 mechanical data

UNIT		A	C	D	E	HE	e	M	L	L ₁	a
mm	max	1.1	0.15	1.4	3.0	2.6	0.5	1.95	0.55 (ref)	0.36 (ref)	0.0
	min	0.9	0.08	1.2	2.8	2.2	0.3	1.7			0.15
mil	max	43	6	55	118	102	20	77	22 (ref)	14 (ref)	0.0
	min	35	3	47	110	87	12	67			6

Absolute Maximum Rating ($T_a = 25^\circ\text{C}$ Unless Otherwise Noted)

Symbol	Parameter	Rating	Unit
V_{DSS}	Drain-Source Voltage	50	V
V_{GSS}	Gate-Source Voltage	± 20	
I_D	Drain Current-Continuous	0.2	A

BSN20

Electrical Characteristics (Ta = 25 °C Unless Otherwise Noted)

Symbol	Parameter	Conditions	Min	Typ	Max	Unit
Static Characteristics						
BV _{DSS}	Drain-Source Breakdown Voltage	V _{GS} = 0 V, I _{DS} = 250 μA	50	-	-	V
		V _{GS} = 0 V, I _{DS} = 10 μA	50	-	-	
V _{GS(th)}	Gate Threshold Voltage	V _{DS} = V _{GS} , I _{DS} = 250 μA	0.5	-	1.5	V
I _{DSS}	Drain Leakage Current	V _{DS} = 50 V, V _{GS} = 0V	-	-	500	nA
		V _{DS} = 25 V, V _{GS} = 0V	-	-	100	μA
I _{GSS}	Gate Leakage Current	V _{GS} = ±20 V, V _{DS} = 0 V	-	-	±100	μA
R _{DS(ON)} ^a	On-State Resistance	V _{GS} = 5 V, I _{DS} = 0.2 A	-	-	3.5	Ω
		V _{GS} = 2.75 V, I _{DS} = 0.2 A	-	-	10	
C _{iss}	Input Capacitance	V _{DS} = 10 V, V _{GS} = 0 V f = 1 MHz	-	21.8	40	pF
C _{oss}	Output Capacitance		-	5.6	15	
C _{rss}	Reverse Transfer Capacitance		-	3.3	10	
Diode Characteristics						
V _{SD}	Diode Forward Voltage	I _{SD} = 0.2 A, V _{GS} = 0 V	-	-	2.5	V

RATING AND CHARACTERISTIC CURVES (BSN20BKR)

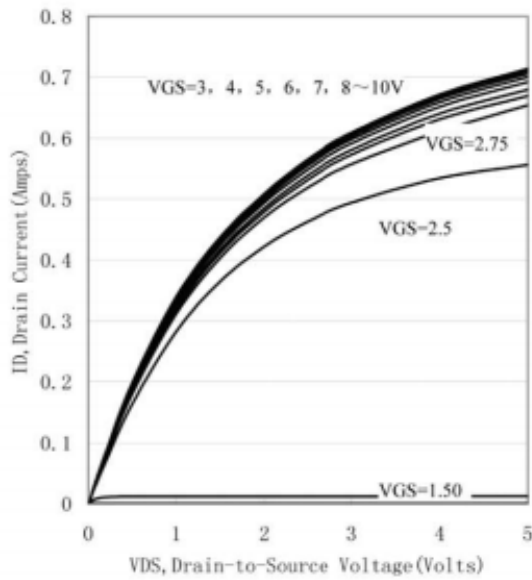


Figure 1. Output Characteristics

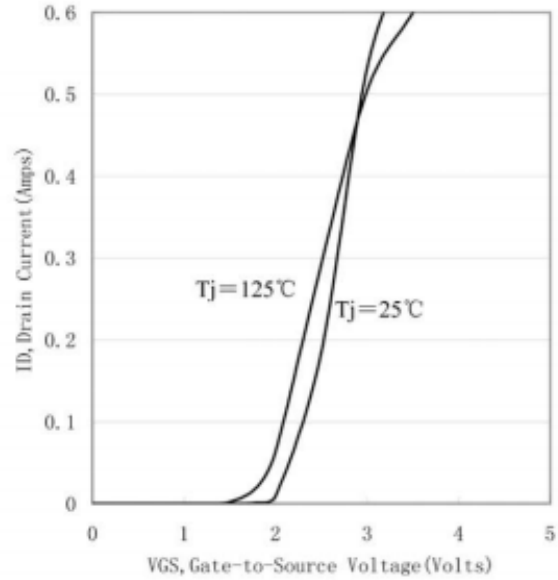


Figure 2. Transfer Characteristics

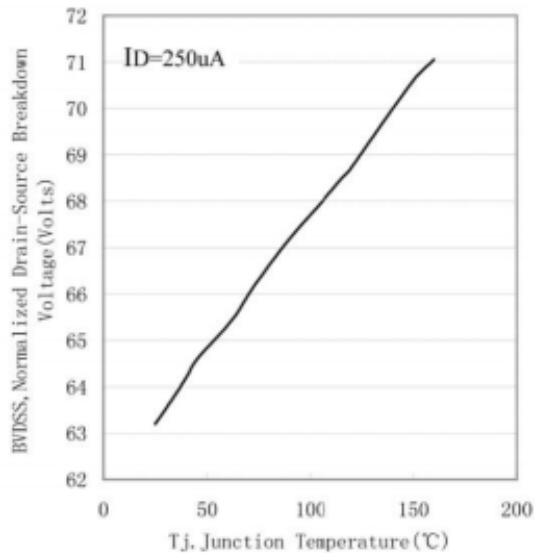


Figure 3. Breakdown Voltage Variation with Temperature

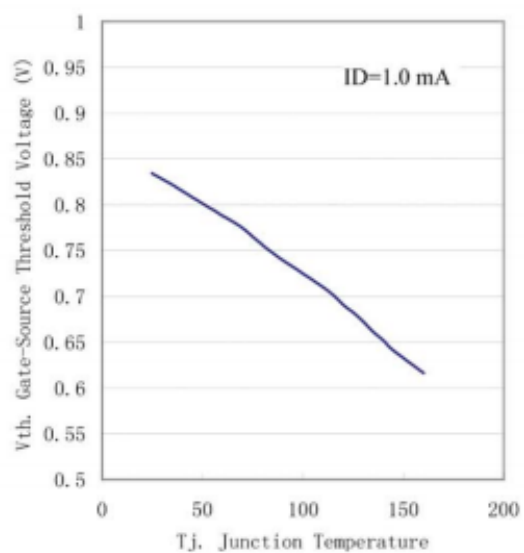


Figure 4. Gate Threshold Variation with Temperature